

Java mocking frameworks

jMock jmock.org

EasyMock easymock.org

Mockito code.google.com/p/mockito

All examples based on JUnit.

Verify interactions

```
import static org.mockito.Mockito.*;
```

```
//mock creation:
```

```
List mockedList = mock(List.class);
```

```
//using mock object - doesn't throw any "unexpected interaction" exception:
```

```
mockedList.add("one");
```

```
mockedList.clear();
```

```
//selective & explicit verification:
```

```
verify(mockedList).add("one");
```

```
verify(mockedList).clear();
```

Stub method calls

```
//You can mock concrete classes, not only interfaces
LinkedList mockedList = mock(LinkedList.class);

//stubbing - before execution
when(mockedList.get(0)).thenReturn("first");

//following prints "first"
System.out.println(mockedList.get(0));

//following prints "null" because get(999) was not stubbed
System.out.println(mockedList.get(999));
```

Stub exceptions

```
LinkedList mockedList = mock(LinkedList.class);

//stubbing

when(mockedList.get(0)).thenReturn("first");

when(mockedList.get(1)).thenThrow(new RuntimeException());

doThrow(new RuntimeException()).when(mockedList).clear();

//following prints "first"

System.out.println(mockedList.get(0));

//following throw runtime exception

mockedList.get(1);

mockedList.clear();
```

Argument matching

```
//stubbing using built-in anyInt() argument matcher  
when(mockedList.get(anyInt())) .thenReturn("element");
```

```
//stubbing using hamcrest (let's say isValid() returns your own hamcrest matcher):  
when(mockedList.contains(argThat(isValid()))).thenReturn("element");
```

```
//following prints "element"  
System.out.println(mockedList.get(999));
```

```
//you can also verify using an argument matcher  
verify(mockedList).get(anyInt());
```

```
verify(mock).someMethod(anyInt(), anyString(), eq("third argument"));  
//above is correct - eq() is also an argument matcher
```

```
verify(mock).someMethod(anyInt(), anyString(), "third argument");  
//above is incorrect - exception will be thrown because third argument is given without an  
argument matcher.
```

Custom Matchers

Annotations

```
public class MockitoTest {

    @Mock MyDatabase databaseMock;

    @Before
    protected void setUp() throws Exception {
        MockitoAnnotations.initMocks(this);
    }

    @Test
    public void testQuery() {
        ClassToTest t = new ClassToTest(databaseMock);

        boolean check = t.query("* from t");
        assertTrue(check);
        Mockito.verify(mock).query("* from t");
    }
}
```

Annotations

```
@RunWith(MockitoJUnitRunner.class)
public class AnnotationMockTest {

    @InjectMocks
    private UserManager userManager;

    @Mock
    private UserService userService;
}
```


Spy